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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/756,617	01/03/2001	Louis B. Rosenberg	IMM1P015A	7226

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EXAMINER

BELL, PAUL A

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 04/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/756,617

Applicant(s)

ROSENBERG ET AL.

Examiner

PAUL A BELL

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 88-133 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 99-102 and 131 is/are allowed.
- 6) ☒ Claim(s) 88,90-96,98,103-105,109-115,118-124,130,132 and 133 is/are rejected.
- 7) ☒ Claim(s) 97,106-108,116,117 and 125-129 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. The applicant has overcome the obviousness-type double patenting of claims 88, 99, 113, and 122 as being unpatentable over claims 1, 20, 35, and 44 of U.S. Patent No. 6,219,032 by filing a terminal disclaimer on 3/13/2003.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 93 and 98 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 93 and 98 recites the limitation "said third one" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 88, 90-92, 94-96, 103-105, 109-115, 118-124, 130, 132 and 133 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley and Salcudean, "MagicMouse: Tactile And Kinesthetic Feedback In The Human-computer Interface Using An Electromagnetically Actuated Input/output Device", Department of Electrical Engineering University of British Columbia Vancouver, BC, V6T 1Z4 , Canada October 19,1993.

With regard to claim 88 Kelley et al. teaches a method for providing force feedback to the user of a graphical user interface displayed by a computer system and for aiding a user in manipulating a user-controlled cursor and in targeting graphical elements in said graphical user interface, said graphical elements interfacing said user to functions of said computer system (abstract and figures 4 and 13), the method comprising: enabling a reception of data representing a displayed location of said user-controlled cursor within said graphical user interface displayed on a display screen of said computer system, a determination of said displayed location based upon signals received from a user interface device that represent the motion of a manipulatable physical object in at least one degree of freedom, said interface device coupled to said computer system and including an actuator for applying electronically modulated forces to be felt by said user (Introduction pages 1-3), wherein said forces are modulated as a function of the location of said physical object in said at least one degree of freedom (figure 9); enabling a selection of a force sensation to be output to said user based at least in part on said data representing said displayed location (figure 9), wherein a plurality of targets displayed within said graphical user interface are associated with target force sensations that are output to said user (figure 13), wherein said targets allow said user to interface with operating system functions implemented by said computer system (figure 13), and wherein a particular target is associated with at least two

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different ones of said target force sensations, said force sensations being different such that said actuator changes its force output based on said force sensation to be output, a first one of said different force sensations selected to be output to said user when said cursor is moved from a position outside a boundary of said particular target to a position inside said boundary, a second one of said different force sensations selected to be output to said user when said cursor is moved from, a position inside said boundary to a position outside said boundary; and enabling a producing of a signal to cause said selected force sensation to be output as forces to said user by said actuator (This is an inherent feature of a force vector which have a magnitude and direction component. For example if one moves left to right you feel a left force and if you move right to left you feel a left force on your hand as you traverse the boundary edge of a target also see page 24, I Window and Region Boundary).

With regard to claim 90 Kelley et al. teaches a method as recited in claim 88 wherein said first one of said different force sensations provides an attractive force that assists said user in bringing said cursor into said target boundary (figures 9 or 10).

With regard to claim 91 Kelley et al. teaches a method as recited in 90 wherein said second one of said different force sensations provides a barrier force that resists motion of said user object in moving said cursor out of said boundary (figure 10).

With regard to claim 92 Kelley et al. teaches a method as recited in 88 wherein said force sensations provide different force magnitudes (figure 9).

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With regard to claim 94 Kelley et al. teaches a method as recited in 88 wherein said first one of said different force sensations provides an attractive force that assists said user in bringing said cursor upon said target, and wherein said second one of said different force sensations is a barrier force that resists said user in removing said cursor from said target such that a magnitude of said attractive entry force is different than a magnitude of said resistive exit force (page 25, top lines 1-5).

With regard to claim 95 Kelley et al. teaches a method as recited in claim 91 wherein said particular target is a menu item in a pull down menu and wherein said barrier force helps said user from overshooting a particular menu selection in said menu item with said cursor (page 21 B. Menu Bars - page 23).

With regard to claim 96 Kelley et al. teaches a method as recited in claim 88 wherein a history of sensor readings is used to determine if said cursor is moving into or out of said boundary (page 11 bottom 7 lines).

With regard to claim 103 Kelley et al. was shown above to teach most of the limitations of claim 103 and in addition applicant is also claiming “defining a graphical object as a pass-through object or a solid object” where solid objects provide force sensations and pass-through do not provide any force sensations (page 10 and page 13 “calculate forces appropriate for the defined user-interface”).

With regard to claim 104 Kelley et al. teaches a method as recited in claim 103 wherein said force sensation is defined by sensation parameters (It is simply inherent that the “force

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sensations” have “sensation parameters” as broadly claimed because this is implement in a computer program).

With regard to claim 105 Kelley et al. teaches a method as recited in claim 104 wherein said sensation parameters include a duration parameter that indicates the time duration for which said force sensation should execute (this procedure is implemented in a program it is inherent that there is a parameter for time duration as broadly claimed).

With regard to claim 109 Kelley et al. teaches a method as recited in claim 103 wherein said graphical object is an icon (figure 13).

With regard to claim 110 Kelley et al. teaches a method as recited in claim 103 wherein said graphical object is a menu item (figure 13).

With regard to claim 111 Kelley et al. teaches a method as recited in claim 103 wherein said graphical object is a hyperlink on a web page (figure 13).

With regard to claim 112 Kelley et al. teaches a method as recited in claim 103 wherein said signal is a high-level command including said sensation parameters (figure 13 and page 13).

With regard to claim 113 Kelley et al. was shown above to teach most of the limitations of claim 113 and in addition applicant is also claiming, “a first type of graphical object with a first force sensation” and “a second type of graphical object with a second force sensation” and said “second force sensation represented by second sensation parameters having different values from said first sensation parameters” (page 24 H and I).

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With regard to claim 114 Kelley et al. teaches a method as recited in claim 113 wherein said first sensation parameters include a duration parameter that indicates the time duration for which said first force sensation should execute (it is inherent that the force has a “time duration” as broadly claimed as part of the program).

With regard to claim 115 Kelley et al. teaches a method as recited in claim 113 wherein a magnitude of said first force sensation is different from a magnitude of said second force sensation (page 24 F, G, H, and I).

With regard to claim 118 Kelley et al. teaches a method as recited in claim 113 wherein said first type of graphical object is an icon and said second type of graphical object is a menu item (figure 13).

With regard to claim 119 Kelley et al. teaches a method as recited in claim 113 wherein said first type of graphical object is a menu heading and said second type of graphical object is a menu item (figure 13).

With regard to claim 120 Kelley et al. teaches a method as recited in claim 113 wherein said first type of graphical object is a hyperlink on a web page (figure 13).

With regard to claim 121 Kelley et al. teaches a method as recited in claim 113 wherein said signal representing said first force sensation or said signal representing said second force sensation is sent to a local microprocessor included in said interface device and separate from said computer system, said local microprocessor receiving said signal as a high level command

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and executing a local routine corresponding to said command to output said force sensation (figure 4).

With regard to claim 122 Kelley et al. was shown above to teach most of the limitations of claim 122 and in addition applicant is also claiming, “creating a mapping with said computer system that associates each of a plurality of types of graphical objects in said graphical user interface with at least one of a plurality of force sensations using said computer system, at least two of said assigned force sensations being different and represented by sensation parameters including a magnitude and a duration”(page 4, lines 1-5, page 9, figure 13).

With regard to claim 123 Kelley et al. teaches a method as recited in claim 122 wherein said types of graphical objects include at least one icon type, menu item type, and window type (figure 13).

With regard to claim 124 Kelley et al. teaches a method as recited in claim 122 wherein said signal sent over said communication bus is a high level host command that includes at least one of said sensation parameters (page 13).

With regard to claim 130 Kelley et al. teaches a method as recited in claim 122 wherein said signal representing said selected force sensation is sent to a local microprocessor included in said interface device and separate from said computer system, said local microprocessor receiving said signal as a high level command and executing a local routine corresponding to said high level command to output said selected force sensation (page 13 and figure 4).

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With regard to claims 132 and 133 Kelley et al. was shown above to teach all of these limitations of claims 132 and 133.

Allowable Subject Matter

6. Claims 89, 93, 97, 98, 106, 107, 108, 116, 117, 125-129 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 99-102 and 131 are allowed.

8. The following is a statement of reasons for the indication of allowable subject matter :
The invention as claimed in applicant's independent claims 99 and 131 when considered as a whole, the exact arrangement of parts and/or the inter connections and functions, is not taught nor suggested by the prior art made of record.

With regard to independent claim 99 the prior art of record does not teach or fairly suggest; “**scaling a magnitude of said collision force**, wherein said scaling is **based on a current velocity of said cursor** in said graphical user interface, said scaling being performed after said collision force is determined; and outputting said scaled collision force to said physical object by said actuator of said interface device”, in combination with all the other limitations of the claim.

With regard to independent claim 131 the prior art of record does not teach or fairly suggest; “**said force sensations based on a position or movement of said user manipulatable**

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object which causes said **cursor to interact with** said particular one of said **elements of said menu, wherein said force sensation is a snapover force provided between elements of said menu**", in combination with all the other limitations of the claims as illustrated in figure 21.

Conclusion

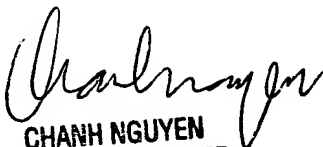
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Bell whose telephone number is (703) 306-3019. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Saras, can be reached at (703) 305-9720.

Any response to this action should be mailed to: Commissioner of Patents and Trademarks
or faxed to: (703) 872-9314 Washington, D.C. 20231

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Paul Bell
Art unit 2675
21 April 2003



CHANH NGUYEN
PRIMARY EXAMINER